

CURRENTLY PENDING CLAIMS

Listing of Claims:

1. (Previously Presented) A jelly-roll type battery unit comprising:
a first electrode plate having a first electrode current collector with a first electrode tab, and a first electrode active material layer coated on at least one surface of the first electrode current collector;
a second electrode plate having a second electrode current collector with a second electrode tab, and a second electrode active material layer coated on at least one surface of the second electrode current collector; and
a separator that is interposed between the first electrode plate and the second electrode plate, wherein,
the first electrode tab is formed by folding a cut portion of an uncoated area of the first electrode current collector toward an upper edge thereof,
the cut portion is defined by a portion of a lower edge of the first electrode current collector, a portion of a side edge of the first electrode current collector that extends from the lower edge, a cut that begins at the lower edge and extends along more than half of a width of the first electrode current collector, and a fold extending between the side edge and the cut, and
the first electrode tab extends past the upper edge of the first electrode current collector, is disposed at substantially the center of the battery unit, at an innermost layer of the battery unit, and partially overlaps and faces the second electrode tab.
2. (Previously Presented) The jelly-roll type battery unit of claim 1, wherein the first electrode tab is disposed at a winding start portion of the first electrode current collector.
3. (Previously Presented) The jelly-roll type battery unit of claim 1, wherein the second electrode tab is disposed at a winding completion portion of the first electrode current collector.

4. (Canceled)

5. (Previously Presented) The jelly-roll type battery unit of claim 1, further comprising an insulating tape adhered to either surface of the first electrode tab.

6. (Previously Presented) The jelly-roll type battery unit of claim 5, wherein the insulating tape is interposed between inner and outer surfaces of the first electrode tab.

7. (Canceled)

8. (Previously Presented) A method of winding a jelly-roll type battery unit comprising:

forming a first electrode plate having a first electrode current collector with a first electrode tab formed at a winding start portion of the first electrode current collector, wherein the first electrode tab is formed by folding a cut portion of the first electrode current collector toward an upper edge thereof, and the cut portion is defined by a portion of a lower edge of the first electrode current collector, a portion of a side edge of the first electrode current collector that extends from the lower edge, a cut that begins at the lower edge and extends along more than half of the width of the first electrode current collector, and a fold extending between the side edge and the cut;

forming a second electrode plate having a second electrode current collector with a second electrode tab attached thereto;

preparing a separator interposed between the first and second electrode plates; and

winding the first and second electrode plates together, with the separator interposed therebetween,

wherein the first electrode tab extends past the upper edge of the first electrode current collector, is disposed at substantially the center of the battery unit, on an innermost layer of the battery unit, and partially overlaps and faces the second electrode tab.

9.-11. (Canceled)

12. (Previously Presented) The method of claim 8, further comprising an insulating tape adhered to either surface of the first electrode current collector.

13. (Canceled)

14. (Previously Presented) A lithium secondary battery comprising:

a battery unit having a first electrode plate having a first electrode tab, a separator and a second electrode plate of an opposite polarity to the first electrode plate, the second electrode plate having a second electrode tab, sequentially disposed;

a can having a space in which the battery unit is housed; and

a cap assembly connected to an upper portion of the can, and having a cap plate and an electrode terminal connected to the cap plate through a terminal throughhole formed in the cap plate and having a gasket at an outer surface for insulation from the cap plate, wherein,

the first electrode plate includes a first electrode current collector having a first electrode tab formed by folding a cut portion of the first electrode current collector toward an upper edge thereof, and a first electrode active material coated on at least one plane of the first electrode current collector, the cut portion being defined by a portion of a lower edge of the first electrode current collector, a portion of a side edge of the first electrode current collector that extends from the lower edge, a cut that begins at the lower edge and extends along more than half of a width of the first electrode current collector, and a fold extending between the side edge and the cut, and

the second electrode plate includes a second electrode current collector with a second electrode tab attached thereto, and a second electrode active material coated on at least one plane of the second electrode current collector, and

the first electrode tab extends past the upper edge of the first electrode current collector, is disposed at substantially the center of the battery unit, on an innermost layer of the battery unit, and partially overlaps and faces the second electrode tab.

15.-19. (Canceled)

20. (Previously Presented) A jelly-roll type battery unit, comprising:

a first tri-functional electrode unit comprising a first plate having a first electrode current collector with a first electrode tab, and a first electrode active material layer coated on at least one surface of the first electrode current collector;

a second tri-functional electrode unit comprising a second electrode plate having a second electrode current collector with a second electrode tab, and a second electrode active material layer coated on at least one surface of the second electrode current collector; and

a separator interposed between the first tri-functional electrode unit and the second tri-functional electrode unit, wherein,

the separator is interposed between the first electrode plate and the second electrode plate,

the first tri-functional electrode unit and the second tri-functional electrode unit are wound, with the separator therebetween, to form the battery unit,

the first electrode tab is incorporated into the electrode current collector in an area of the first electrode plate where the corresponding electrode active material layer is not coated,

the first electrode tab is formed by folding a cut portion of the first electrode current collector toward an upper edge thereof, the cut portion being defined by a portion of a lower edge of the first electrode current collector, a portion of a side edge of the first electrode current collector that extends from the lower edge, a cut that begins at the lower edge and extends along more than half of the width of the first electrode current collector, and a fold extending between the side edge and the cut, such that the first electrode tab extends past the upper edge of the first electrode current collector, is disposed at substantially the center of the battery unit, on an innermost layer of the battery unit, and partially overlaps and faces the second electrode tab.

21. (Previously Presented) The jelly-roll type battery unit of claim 20, further comprising an insulating tape adhered to either surface of the first electrode tab.

22. (Previously Presented) The jelly-roll type battery unit of claim 21, wherein the insulating tape is interposed between the inner and outer surfaces of the first electrode tab.

23. (Canceled)

24. (Previously Presented) The jelly-roll type battery unit of claim 2, wherein the first electrode tab prevents deformation of the jelly-roll type battery unit.

25. (Previously Presented) The jelly-roll type battery unit of claim 2, wherein material cost of the jelly-roll type battery unit is minimized by forming the cut portion in the winding start portion and folding upward to form the first electrode tab.

26. (Previously Presented) The jelly-roll type battery unit of claim 2, wherein the first electrode tab provides for a lower internal resistance, as compared to an electrode tab made of a different metal than a corresponding electrode current collector.

27. (Previously Presented) The jelly-roll type battery unit of claim 14, further including a plurality of insulating tapes attached to both surfaces of the first electrode current collector, to prevent an electrical short-circuit between the first and second electrode plates.

28. (Previously Presented) The jelly-roll type battery unit of claim 27, wherein the plurality of insulating tapes are attached to both surfaces of the first electrode tab, to prevent electrical short-circuit due to burring of the first electrode tab.

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